Conductive silicone Adhesive type ECA CS001

ECA CS 001 is a single component electrically conductive adhesive comprising of silicone resin filled with conductive carbon particles. It cures on exposure to air at room temperature to form an electrically conductive flexible silicone elastomer. Once cured it adheres strongly to a wide range substrates.

Main features

Single component – ready to use
Room temperature cure
Neutral cure – does not evolve corrosive by-products on curing
Safe for use with most common substrates – non tarnishing/discolouring
Excellent resistance to ageing
Wide service temperature range – remains flexible at extremes of temperature
Non-slump/Thixotropic - will not 'run' or slump after application

Applications

ESD grounding
Vibration and/or shock resistant sealant/adhesive for electronic assemblies
Electrical connection of materials with dissimilar thermal expansion coefficients
EMI shielding with environmental sealing (IP68 possible)

Uncured Properties

Colour	Black
Form	Thixotropic paste
Cure time for handling strength (typically)	24 hours
Full cure (typically)	72 hours
Recommended minimum time to use after application	24 hours

Cured Properties

Density	1.10gcm^{-3}
Hardness	55 Shore A
Volume resistivity	15 Ω.cm
Adhesion – lap shear aluminium to aluminium	1.25MPa
Tensile strength	2.6MPa
Elongation	150%
Service temperature range	-60^{o}C to 200^{o}C

Packaging

ECA CS 001 is available in a variety of industry standard formats that include 310ml cartridges, 3 and 6 fl.oz Semco cartridges. It can also be supplied in syringe barrels from which the material may be directly dispensed using pneumatic systems etc. The two main sizes are 30ml and 55ml both of which incorporate luer lock fastenings at the nozzle that allow a wide range of dispense tips to be easily attached and detached.

Storage

It is recommended that when not in use that the material is stored in a cool dark, dry place. If the facility exists then some form of refrigerated or freezer storage is ideal (note – do not store with foodstuffs). If kept properly sealed and in a suitable location then the material will remain usable for up to 6 months (depending on format).

Handling

When using this material observe usual standards of industrial hygiene/practice. Avoid skin/eye contact and work in a well ventilated area. For more detailed information please refer to the MSDS (Material Safety Data Sheet)

Instructions for use

Surfaces should be clean dry and sound i.e. free form loose material. It is recommended that areas to be bonded are cleaned using a suitable solvent prior to applying the sealant

To ensure the highest level of electrical or shielding performance it is essential that the surfaces to be bonded have a low contact resistance. This means than materials that have a naturally occurring oxide layer such as aluminium alloys may need to be lightly abraded and cleaned directly prior to bonding.

Assemble parts as soon as possible and certainly within 5 minutes of sealant application

Material cures from it’s outer exposed surface inwards, therefore avoid bond widths greater than 12mm

In most cases parts may be handled after 24 hours but avoid stressing the joint until full cure has been achieved

The time for full cure to take place is dependant on both humidity and temperature. Higher levels of temperature and humidity will minimise curing times whilst low levels of humidity and temperature will retard curing. Generally, cure rate may be most conveniently controlled by means of temperature

Excess material should be removed by means of a spatula or similar implement. Smaller traces of the uncured material may be removed by wiping with a lint free cloth damped with MEK, petroleum spirit etc taking care to observe the safety precautions required in using flammable/harmful solvents of this type

A priming agent is available for treating some inconsistent or difficult to bond surfaces. Please contact us for further information

Product notes

To the best our knowledge the information contained in this data sheet is accurate and representative of the product, however, it is the responsibility of the user to determine the suitability, safety and legality of use in any application

We recommend that the end user performs an evaluation to determine the suitability of the product in their application

This product is not intended for direct use in food, medical and cosmetic applications

The values shown on this data sheet are typical should not be used as a basis of a specification

Information supplied as to the suggested applications for this product should not be construed as constituting a license or concession to infringe any patent. Furthermore we cannot warrant that the sale or use of this product will not infringe any patent involving any application of this product either on its own or in combination with other materials or process

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